REMARKS

This Amendment and Response is believed to be fully responsive to the Office Action. Claims 1-5 and 9-18 are pending. Claims 1, 7, 13 and 15 have been amended. Claims 1, 7, 13 and 15 are the independent claims.

Claims 7 and 13 stand rejected under 35 U.S.C. § 112. In view of correcting amendments, these rejections should be withdrawn.

Claims 1-5 and 9-18 stand rejected under 35 U.S.C. § 103 as unpatentable over Pattichis, *Neural Network Models in EMG Diagnosis* (May 5, 1995) and U.S. Patent No. 6,780,589 to Gulati ("Gulati") in view of U.S. Published Application No. 2002/0065682 to Goldenberg ("Goldenberg"), and further in view of US. Patent No. 5,724,571 to Woods ("Woods").

Applicants respectfully submit that claims 1, 7, 13 and 15, as amended, as well as the claims dependent upon them, are patentable over the cited prior art, as discussed in the personal interview of February 12, 2008, and in the prior response filed with the Request For Continued Examination.

As detailed below, the presently claimed invention is materially different than the cited prior art. The claimed invention involves a computerized system that prompts a user for essentially a complete holistic medical workup; it seeks to obtain from the user all information that can be elicited regarding each and every area of the user's health and well being, both physical and mental. To do this it queries the user repeatedly. The queries are based on a comprehensive medico-health taxonomy. Because a number of the queries can be redundant – so as to make sure to elicit all available information, the system then simplifies the user's responses, and stores the information contained in them using a unique data structure, also based on the novel taxonomy. In the database, the information encoding the user's comprehensive

7

bodily and mental health status is organized according to three indices – system, function and where. Unlike conventional physician interactions where you go to a doctor and tell him what's wrong, the claimed invention obtains a comprehensive snapshot of your health, not just focusing on a particular ailment or condition, but on every bodily-health system of your being – and then stores this snapshot in a unique database for further processing.

As noted below, the cited art simply does not teach the claimed features, and the Applicants feel significant frustration at the Examiner's refusal to detail how they do, if he has such a basis behind the pending rejections.

The Goldenberg Reference

Applicants again traverse the Examiner's assertions contained in the Office Action, as well as in the two prior office actions, that the prior art in general, and in particular Goldenberg, somehow describes a system that prompts a user to provide data <u>sufficient to comprise a substantially complete description of his health status</u>, where the data is <u>conceptually organized according to a defined substantially comprehensive medico-health taxonomy</u>.

The Examiner has not addressed this traversal, and has not identified anywhere in Goldenberg, especially in the cited sections ¶¶ [0051] – [0053] of Goldenberg, where this feature is allegedly taught. Applicants respectfully submit that repeated cut and paste operations from earlier office actions is not a valid response to a legitimate traversal, and is not offering Applicants the full examination of their amended claims that they are due.

For example, the "Response to Arguments" section of the Office Action, appearing at pp. 13-14, totally and completely ignores Applicants' stated traversal regarding Goldenberg. The Examiner merely conclusorily states that "all of the limitations which Applicant disputes as missing in the applied references ... have been fully addressed by the Examiner as either being

8

fully disclosed or obvious in view of the collective teachings of Pattichis, Gulati, Goldenbergs and Woods." Office Action at 14. Applicants understand that the Examiner asserts this, but it makes no sense to them. Applicants now <u>again</u> ask for some basis in Goldenberg for this assertion, as they have found <u>none</u>.

The Examiner seems to insinuate that Applicants only attack individual references, and thus waxes eloquently on the "test for obviousness." Again, there is a disconnect. Applicants do not see that the cited references contain all of the claimed elements, so even if they are all combined, the combination does not yield the claimed invention! If no cited reference has one or more of the claimed features, the rejection is improper!

The Examiner has <u>not</u> on this occasion -- or on any previous occasion -- explained where in Goldenberg the claimed feature of "prompting a user to provide data <u>sufficient to comprise a substantially complete description of his health status</u>, where the data is <u>conceptually organized according to a defined substantially comprehensive medico-health</u> taxonomy" is taught. It simply is not taught or even suggested in Goldenberg, and the Examiner refuses to face that fact or even justify this assertion. That is decidedly unfair, and has forced, and continues to force Applicants to incur needless expense.

Once again, Goldenberg is a web-based medical information and medical referral system, entitled a "virtual doctor cybernet" system. Users of the Goldenberg present **targeted** and **specific queries** and the "virtual doctor cybernet" returns information relevant to such queries. If the Goldenberg system cannot provide a user an answer to a user's <u>specific query</u> – which must be phrased using standard medical categories and must be answered, if at all, using such standard medical categories – it finds him or her a referral to a doctor or specialist.

Goldenberg is thus restricted to a specific medical problem or system. Goldenberg's "virtual doctor cybernet" does not elicit form a user a substantially comprehensive expression of the user's health status. It does not perfrom some "comprehensive virtual interview" with a user. It does not try to do a complete workup of a patient to get as much data as possible regarding all aspects of his or her health status.

Thus, it does not guide a user through a comprehensive set of questions in order to elicit from a user, in the user's own words, a **comprehensive desciption** of such user's health status. Finally, Goldenberg does not teach or suggest processing and organizing the user provided data so as to store it in memory in a multidimensional data structure having at least three dimensions whose dimensions reflect said taxonomy, said at least three dimensions comprising a systemic field, a functional field and a locational field.

At a first service level, Goldenberg is a literature search service, nothing more. At higher levels of service, it generates referrals to doctors and specialists. At no level does it elicit and store a comprehensive health status. At no level does it teach or suggest the claimed invention.

Where is there any mention of a substantially complete description of the user's health or prompting of the user to provide data sufficient to comprise a substantially complete description of his health in Goldenberg?

Here are ¶¶ [0051-0053] of Goldenberg:

[0051] FIG. 6 illustrates a third level of service (level 3). As previously discussed herein, level 3 service may require the assistance of one or more specialists. Rather than providing only one professional to guide the user through literature searches and other inquiries, level 3 service contemplates a more complete level of service to the user. For example, level 3 service could provide the user with a team of professionals or specialists who communicate directly with the user about treatment options, risks, side affects, and other matters. Thus, level 3 service tends to focus on the specialist.

[0052] At step 601 the processor conducts a search in accordance with criteria established by the user and possibly a professional identified in level 2 service. Based on the

10

information provided, the processor establishes a weighting function and criteria to identify appropriate specialists. The processor accesses databases of specialists and compares the qualifications of the specialists in the database with the requirements established by the patient and doctor inquiries at levels 1 and 2. The database can be organized in any form suitable for such searches. For example, the database can be organized by specialty, by specialist, by geographic region, board certification, or on some other appropriate basis. Using either criteria specifically identified by the patient and doctor, or criteria appropriate to the context of the inquiry, the processor will identify a primary field at step 602 and transmit a criteria menu at step 603 to the user. The criteria may include such things as geographic area, hospital affiliation, acceptance of various insurance payment plans, or other criteria. The criteria menu may allow the user to specify the level of importance of each of the criteria. Based on this information, at step 604 the processor will establish a weighing function and identify a list of candidate specialists.

[0053] Because many medical issues require input from specialists in various fields, the processor will then determine from the criteria, and the information provided by the user and the doctor in level 2, whether secondary specialists are necessary and in which fields secondary specialists should be consulted. At step 605, the secondary fields are identified and at step 606 the processor can inquire if the user desires to establish the same preferences for selection of specialists in the secondary or related fields. If not, a message is transmitted to the user to adjust the selection criteria in the secondary fields at steps 607. At step 608 the secondary weighing function is established and the process is repeated at step 609 until all of the secondary fields are complete. At step 610 the advising team is selected and at step 611 the counselors determine whether or not they can accept the assignment. Once the counselors have accepted the assignment at step 612 the team list is established. At step 613 messages are routed to the team members concerning the inquiry to establish treatment options or other steps. The team members may select which messages they should be copied on, as their specialty might only be relevant to certain questions.

The Office Action then claims that *Goldenberg* at ¶ 0046-0047 teaches that the data provided by a user is stored in memory in a multidimensional data structure whose dimensions reflect the defined taxonomy. Office Action at 4, first paragraph. Applicants again respectfully traverse.

Here is Goldenberg at the cited ¶¶ 0046-0047:

[0046] FIGS. 4 through 7 illustrate the activities which take place at the various service access levels. FIG. 4 illustrates activities which take place at the first level of service (level 1) which is primarily a literature access service. A feature of the system according to the invention is that the literature access can be tailored to the sophistication level of

the user. For example, researchers, medical students, doctors, and other professionals or semi-professionals may require more sophisticated literature than those without such specialized skills. At step 401, an inquiry is read, as described with respect to steps 301 and/or 307, for example. At step 402, the system according to the invention allows the processor to transmit an inquiry to the user asking for the desired level of sophistication. The system may transmit this information in any suitable form, for example, by requesting information about the user's level of education or by using a sliding scale reflecting the sophistication of the information to be transmitted. The system can also employ a sliding scale, e.g., 1-10 with 1 representing very basic information, 10 representing very sophisticated information with intermediate levels in between. If at step 402 the system is programmed to transmit such an inquiry, then the response is received at step 403.

[0047] Alternatively, at step 402 the system could be programmed not to transmit a sophistication level inquiry but instead, at step 404, to determine the sophistication level of the information to be provided at level 1 according to a subscription level search. If so, at step 405 the user ID and password are compared to a database to determine the appropriate level of sophistication to respond to the inquiry. Alternatively, at step 406 the system could determine the level of sophistication of the information it provides based on a contractual arrangement. If not, the system could use the context based techniques previously discussed. In any case, once the level of sophistication for the literature search is determined, at step 408 the processor determines search criteria, for example using known techniques employed by various search engines. Thus, the processor can have any number of search engines embedded therein. At step 409 the processor accesses the relevant databases and at step 410 establishes a list of documents responsive to the request. At step 410 the processor can then transmit that list to the user. The list can be transmitted to the user in the form of titles, titles and abstracts, the first several lines of the documents, or any other format which is consistent with the user's ability to understand generally what information the document contains.

This describes a literature search service. There is no mention at all of data provided by a user being stored in memory in a multidimensional data structure whose dimensions reflect the defined taxonomy.

Thus, Goldenberg also clearly does not teach storing user provided data in multidimensional data structure having at least three dimensions whose dimensions reflect said taxonomy, said at least three dimensions comprising a systemic field, a functional field and a locational field, as claimed.

The Newly Cited Woods Reference

The Office Action cites to a new reference, Woods, as teaching "that the system having at least three dimensions." First, this is <u>not</u> what is claimed, and the Examiner misreads the claim. The claim language reads as follows: "wherein the data is stored in the memory in a multidimensional data structure having at least three dimensions whose dimensions reflect said taxonomy, said at least three dimensions comprising a systemic field, a functional field and a locational field." The claimed feature relates to how the data, once simplified and once organized, is **stored** **in** **the** **database**. To teach this feature, a reference would need to store data **in a multidimensional data structure having at least three dimensions whose dimensions reflect a comprehensive medico-health taxonomy.** There is no disclosed comprehensive medico-health taxonomy in Goldenberg, and no multidimensional database reflecting such a comprehensive taxonomy disclosed in Woods. There is such a taxonomy and corresponding multidimensional database in the present Specification and claims.

Woods is a method and apparatus for generating query responses in a computer based document retrieval system. It operates on pre-existing texts, not a human user's various responses to a comprehensive health status workup. The cited sections of Woods deal with <u>query formation</u>, not how information is stored or organized once obtained from a human user.

Here is the cited section of Woods, at 9:35-67:

Other parameters (either predetermined or set by the user or a process) determine the weighting of each of the different dimensions of relaxation (e.g., proximity, permutation, morphology, taxonomy, entailment, and deletion), and two parameters specify penalties to be assigned if a hit passage contains a sentence boundary or a paragraph boundary. Each of these parameters can either be made available for manipulation by the information seeker or set to predetermined useful values. The ranking of a passages is determined by the net penalty that is the sum of its assigned penalties from various sources.

2C. General Method for Generating Hit Passages in Order of Desired Ranking

The following methodology gives a generalized procedure for generating hit passages

and for ordering them in a ranking that best reflects the search query. Further below is a discussion of a specific implementation of this methodology.

Let the query q be a sequence of terms q1, q2, . . . , qm, each of which is a word or phrase, and let x be a text document including a sequence of words x1 ,x2, . . . , xn. A term-similarity distance function is used that assigns to ordered pairs of terms (p, p') a distance measure d=d(p, p'), where p and p' are terms and d is a similarity distance between the terms.

A similarity distance of zero will represent identity or full synonymy of the terms, or some other circumstance in which no penalty is assigned to matching query term p to text term p'. Larger similarity distances will correspond to terms that are only partially synonymous or otherwise related--e.g., because one is more general than another or entailed by the other, or because some sense of one is partially synonymous to some sense of the other, or because the terms are semantically similar in some other way.

Where does this section of Woods teach or suggest the data is stored in the memory in a multidimensional data structure having at least three dimensions whose dimensions reflect said taxonomy, said at least three dimensions comprising a systemic field, a functional field and a locational field"?

Where do the words "system, function and where" even appear in Woods?

This is yet another wild goose chase at Applicants' expense.

It simply does not, on either count, and Applicants are faced with yet another failed citation to prior art.

The Response to Arguments" section of the Office Action continues that it would have been obvious to combine the feature of Woods with the collective teachings of Pattichis and Goldenberg "with the motivation of providing a method and apparatus for generating responses to queries with more efficient and useful location of specific relevant information passages within a text." Office Action at 5. But this is not the motivation of the invention, and this "motiviation" is **irrelevant**.

The claimed feature is not about generating "**query responses**" at all. It is about how to efficiently store comprehensive health status data obtained from a user after simplification and organization.

Woods is irrelevant to the claimed feature against which it is (mis)cited.

In fact, none of the cited references seek a user to provide data that collectively comprise a substantially complete description of the user's health. None describe a unique defined taxonomy to organize this data, and none describe using a defined distance metric to locate other users' multidimensional data structures that are closest to that of a first user.

Thus, Applicants respectfully submit that the Goldenberg and Woods references in particular, and all of the cited art in general, do not teach the claimed invention.

Unlike prior art systems, the system and methods of claims 1, 7, 13 and 15 elicit from a user and/or store, as the case may be, a *comprehensive snapshot* of such user's health status by prompting a user using the terms of a novel comprehensive medico-health taxonomy. Such a taxonomy is designed to be ultimately transformable into a multidimensional data structure capable of being stored in a computer – and not used to generate "query responses" for the purposes of searching and analysis.

Moreover, such a taxonomy is optimized for storage and processing in a large database of similar comprehensive health descriptions of humans, inasmuch as the elements of the taxonomy are substantially orthogonal to one another.

As described in the specification, such a taxonomy can be used as the common semantic reference frame in which a user can be queried as to her health status and in whose terms she can answer. As described in the Specification, such a "taxonomy is a language or lexicon that is detailed enough so as to allow the system to store a comprehensive description of the user which

facilitates finding a medically meaningful similar users, and at the same time comprises language

that is natural enough to allow even the uneducated and unsophisticated user to meaningfully

articulate his or her own medical state of being." *Specification* at ¶ 59. In one exemplary

embodiment, the task of inputting responses to questions can be facilitated by prompting a user

to articulate their health profile, and then enter any medical/health events via an age/gender

appropriate graphic interface. *Specification* at ¶ 133, Fig. 34; ¶ 140, Figs. 18-22. An exemplary

taxonomy is provided in Exhibit A-1. Thus, as noted during the interview, for ease of computing

at the system level, a processed set of a user's responses organized according to the taxonomy

can be mapped to a substantially orthogonal basis set using, for example, a set of "system-

function-where" triples as provided in Exhibit A-3 of the Specification. These "system-function

—where" triples are the claimed **said at least three dimensions comprising a systemic field, a**

functional field and a locational field.

Thus, none of these references teaches or suggests prompting a user to provide data

sufficient to comprise a substantially complete description of his health, wherein the data is

conceptually organized according to a defined substantially comprehensive medico-health

taxonomy, and wherein such data is stored in the memory in a multidimensional data structure

whose dimensions reflect said taxonomy.

As admitted in the Office Action, neither Pattichis nor Gulati teach the claimed invention

either.

Pattichis teaches the use of electromyography (EMG) and pattern recognition algorithms

to diagnose neuromuscular disorders. *Pattichis* at 486. EMG is useful for diagnosing

neuromuscular disorders because it measures the electrical activity in muscles. Electrical signals

are acquired with needles inserted into the muscle itself. *Pattichis* at 486. No part of *Pattichis*

teaches or suggests querying a user for a comprehensive health workup in terms of a

substantially comprehensive taxonomy and storing the user provided data in a multidimensional

data structure as claimed. *Pattichis* is concerned only with measuring simple muscle activity via

electrodes – not by drawing on the wealth of information that the patient has in his mind about

his condition and his general health state in a systematized manner. Furthermore, *Pattichis* is

unconcerned with any medico-health information outside the realm of neuromuscular disorders.

This is quite a significant departure from a comprehensive description of the totality of a

human's health, encompassing both body and soul. *Pattichis*, therefore, does not teach or

suggest the systems or methods of the independent claims.

Gulati is directed to a system that exposes genetic mutations by measuring the

hybridization of oligonucleotides in a biological sample to produce dot spectrograms and

statistically processing the dot spectrograms. *Gulati* at 4:35-54. Furthermore, the *Gulati* system

is limited to discovering genetic mutations. Measuring the hybridization of oligonucleotides is a

specialized biochemical test that acquires medical data in the conventional manner. The method

of *Gulati* is vastly different than presenting a series of queries to a user based on a specific

comprehensive medical taxonomy, processing the user's responses and then then storing the data

in memory in a multidimensional data structure whose dimensions reflect said taxonomy. *Gulati*

does not seek any articulation from a user as to his own medico-health state of being. It has no

user provided data and elicits none.

Thus, the cited references, whether taken alone or in any combination, do not teach or

suggest the systems and methods of claims 1, 7, 13 and 15, as amended, and thus these claims

are urged as patentable over the cited prior art. For similar reasons, dependent claims 3-6, 9-12

and 14-15 are also urged as patentable over the cited prior art. Therefore, Applicants

17

respectfully submit that the pending claims are now in condition for allowance. Favorable reconsideration is requested.

CONCLUSION

In view of the remarks herein, Applicant believe that each ground for rejection made in the instant application has been successfully overcome or obviated, and that all pending claims are now allowable. Withdrawal of the Examiner's rejections, and allowance of the current application are respectfully requested.

No additional fee is believed necessary for entry of this Amendment. However, the Commissioner is hereby authorized to charge any additional fee to Deposit Account No. 50-0540.

Dated: **March 26, 2009**   Respectfully submitted,

Aaron S. Haleva, Esq.
Reg. No. 44,733
KRAMER LEVIN NAFTALIS & FRANKEL LLP
1177 Ave. of the Americas
New York, New York 10036
Tel.:   (212) 715-7773
Fax.:   (212) 715-9397